The connected journey

National Implementation of MaaS in Denmark
Finn Kock Sørensen

• **Experience**
  • FlexDanmark
    • 2015 – project manager for nationwide MaaS project, “The connected journey”
    • 2014 - Senior consultant
    • 2011 -2014: Chief of business processes and business systems
    • 2013: Chief of FlexDanmark callcenter, Traffic monitoring unit
    • 2008- 2011: consultant & team leader for support unit
  And:
  • PTO (NT): “Traffic monitoring”
  • Region Nordjylland: Evaluation and booking of trips to/from public hospitals
  • Aalborg Taxi: Booking trips (including from PTO)

• **Education**
  • 2014: Executive MBA, Master in Management of Technology (MMT)
  • 2001: Master of Science in Public Administration (Cand. Scient. Adm.)
FlexDanmark

• Facts:
  • Started in 1997
  • Independent public owned company from 2012 (owned by Danish PTO’s)
  • Yearly budget of 53 million DKR
  • 110 employees placed in Aalborg (including call center and part time jobs for students). 35 employees in non call center
  • We support and implement a process, not only an it-system
  • We handle a nationwide IT-solution for Flex Traffic
  • We run a 24/7 call center (booking and management of vehicles)
  • We handled Flex Traffic for 150 million EUR 2016
  • We handled more than 6 mio. Flex-travels in 2016

• Our mission:
  • Reduce total costs of FlexTraffic
  • Improve our operation
  • Improve services solution to citizens and stakeholders
What is ”The connected journey”?

• Coupling first-/last-mile challenges with the regular public transit network
• Public address-to-address transit service, provides travel time, simplified booking and more security for the citizens.
• Improved access to the regular public transit network for rural areas, and an overall improved cohesion between different public transit services
• Pilot operation since Q4 2016. Public service offering in select areas since May 2017
• Technologically ready for nation wide service by Q4 2017
• Cost of the project is about 30 million DKK (4 million EUR)
  • 50% financed by the National Traffic Agency, earmarked for improvement towards rural areas
  • 50% financed by the transit authorities, through FlexDanmark
The Connected journey

• Nationwide project MaaS solution. The Connected Journey is a project that creates better and more flexible offer of public transport for people in rural areas. This will be achieved by expanding the nationwide planning website, Rejseplanen.dk, with additional public transport services, the so-called flex traffic (DRT)

• Funded jointly by FlexDanmark (including PTOs) and Danish Ministry of Transportation

• Live in parts of Denmark now and nationwide: end of 2017
The Danish Model (transportation orgs.)

- One shared IT-system for the demand-responsive transportation needs
- Centralized IT, know-how and call-center operation
- Supports five transport authorities in Denmark
- 100+ municipal units with system access
- 10,000+ unique system users
DRT - corridor

All bus stands in towns with > 1500 inhabitants
Addresses and bus stands in the corridor and in minor towns
DRT – total area coverage with differentiated fares per kilometer

- 0.5 € per km
- 1 € per km
DRT – areal coverage with exceptions

- Bus stand in the towns
- Service to all addresses and bus stand
  - Except addresses with conventional public transportation
Bufferzones: Jammerbugt Municipality

Last mile / first mile in yellow areas covered by DRT feeding bringing customers to/from timetable bus/train

Now everyone has access to the primary net of public transport in the municipal.

DRT only where no busses covers the area

Opening hours
• All days: 04.30 – 00.30
Bufferzones: Hjørring Municipality (weekdays)

Opening hours
- Weekdays: 04.30 – 21.00
Bufferzones: Hjørring (evening/weekend)

Opening hours
• Weekdays: 21.00 – 00.30
• Weekend: 04.30 – 00.30
“TCJ” starts at Rejseplanen.dk

- Rejseplanen.dk is a nation wide product for travel planning
- Built upon HaCon (HAFAS-product, same as e.g. “Reseplaneraren”)
- Main obstacle: There is no international standard for surface based demand-responsive traffic covering our needs
- Solved through dialogue and cooperation with Rejseplanen/HaCon – but a international standard is still missing
- The offered price is calculated by a price-service developed by FlexDanmark, and only covers the DRT-part of the trip
... And you are transferred to a Portal

- Users are transferred from Rejseplanen.dk to DSRs portal at www.densamlederejse.dk
- Details of the trip is transferred
- Responsive website design
- Improved for vision impaired users
Travel details are adjusted using the Portal

- Users select the number of travellers, adds payment information and additional information (i.e. mobility aids) using the DSR-portal.
- The order is transferred to PLANET using the SUTI-protocol.
- Planning, optimization and monitoring is completed in the same manner as all other demand-responsive trips (flextrips).
What are the plans for the rest of 2017?

• Public service offering from in two municipal regions in North Jutland (Hjørring og Jammerbugt municipals) since May 10, 2017
• Develop and improve tools for trip monitoring
• Ramp-up for national coverage
The Future ...?

34 Danish islands with ferry connections (booking required)

Other connections from DK to S, N, D, GB, IS & FO

AAL – CPH: 16 daily flights
The Next Step?

Ordering online/App

Information about the next part of the journey via mobile phone

Information about delayed train (the next part of the journey) via mobile phone

Information about the next part of the journey via mobile phone

Information about the next part of the journey via mobile phone

Information about the next part of the journey via mobile phone

Payment for the entire journey via mobile phone / travel card (Rejsekortet) / credit card

Receipt can be viewed online / App

Self-service bookings: App/Internet

Only one frontend booking interface for the citizens – but if necessary this leads to several different bookings in other systems (train, bus, taxi)

Receipt can be viewed online / App

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The Future: Cost Reduction

Patient transport financed by taxes
• Automated evaluation
• Integration between private transport (taxi, ride-share, etc.) and public transport services
• Public spenditures today: about 1.000.000.000 DKK (134 mio. EUR)
A New Paradigm is Necessary

• It is necessary to shift the way we think about public transit
• Important not to focus on timeliness of a given service alone
• Important to take responsibility for the entirety of the travelers journey, from A to B – this is part of the DSR mindset
• This is also necessary in order to responsibly move citizens from taxis to other public transport services (or parts of the trip)
Other requirements for introducing MaaS

- Open interfaces for data exchange between operators/systems
- Description of resources
- Description of individual transit modes
- Description of geography, availability, etc.
- Description of payments
- Description of real-time positions
- Handshake between different operators/systems
- ...
Common Platform for Mobility?

Demand
- Flextrafik (DRT)
- Rejseplanen
- 3rd Party Systems
- 3rd Party Apps
- WebPortal / App booking
- Call-Center booking

Supply
- Bus
- Train
- FlexTrafik
- Taxi
- Ferry & Airtravel
- Car / Ride Sharing

*Blue* is in operation - *Green* is in test - *Yellow* is on the way but needs clarification - *Red* is future needs
Thank You for Your attention and interest!

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• Questions is welcome later today and through email.

fks@flexdanmark.dk